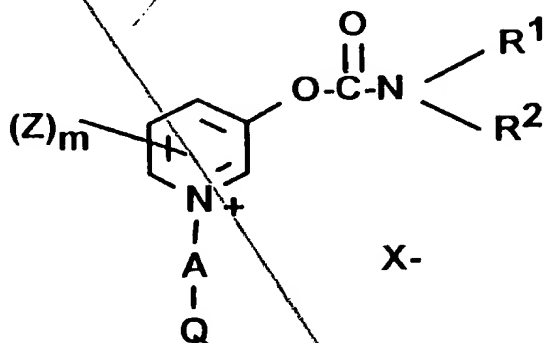


## CLAIMS:

1. A 3-position substituted pyridinium derivative of the general formula



where R<sup>1</sup> is -H, lower alkyl, alkenyl, aryl, aralkyl, cycloalkyl, cycloalkylalkyl,

R<sup>2</sup> is lower alkyl, alkenyl, aryl, aralkyl, cycloalkyl, cycloalkylalkyl,

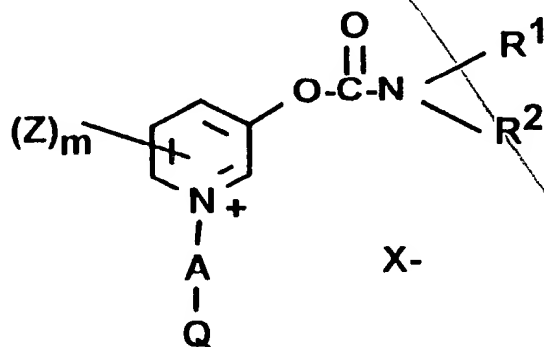
A is an alkylene, alkenylene or an alkynylene group spacer and

Z designates dialkylcarbamoyl or lower alkyl and m is zero or 1.

Q is a transporter recognition moiety adapted to enhance the transport of congeners via biological membranes, which Q entity can optionally be substituted or coupled to a physiologically active acceptable moiety, and where X<sup>-</sup> is an anion.

2. A compound according to claim 1 where A is (CH<sub>2</sub>)<sub>n</sub>, where n is from 1 to 24.
3. A compound according to claim 1, where the Q transporter recognition moiety is selected to enhance the transport of congeners via the blood brain barrier, through cell membranes, through kidney tubuli and through the gastrointestinal wall.
4. A compound according to claim 2, where n is from 4 to 12.
5. A compound according to any of claims 1 to 4, where Q is a sugar moiety.
6. A pyridinium derivative according to claim 1 to 5, where the super is an aldose selected from: glucose, mannose, galactose, aldopentoses, aldotetroses and glyceroses and their corresponding aldonic and uronic acids.

7. Pyridinium derivative according to claim 6, where the super is a ketose is selected from: fructose, sorbose and pentaketoses, where the deoxy hexose is fucose mannitol, or mannose, where the alditol is selected from mannitol and ducitol (C6), rebitol (C5), erythritol (C4), and glycerol (C3), where the cyclohexitol is selected from inositol and myoinositol, where the disaccharide is selected from lactose, maltose and sucrose, where the oligosaccharide contains sialic acid, or this is absent, where the amino sugar is selected from glucoseamine and N-acetylglucoseamine, where the phosphorylated sugar is phosphatidylinositol and where the polysaccharide is selected from cellulose and amylose which results in a sustained release drug form. Where the polysaccharides can either be covalently coupled to the PYR-carbohydryl moiety or by physical interaction such as ion-coupling or coating.
8. A pharmaceutical composition containing an effective quantity of a compound of the formula:



where  $R^1$  is -H, lower alkyl, alkenyl, aryl, aralkyl, cycloalkyl, cycloalkylalkyl,  $R^2$  is lower alkyl, alkenyl, aryl, aralkyl, cycloalkyl, cycloalkylalkyl, A is an alkylene, alkenylene or an alkynylene group spacer and Z designates dialkylcarbonyl or lower alkyl and m is zero or 1. Q is -H or a transporter recognition moiety adapted to enhance the transport of congeners via biological membranes, which Q entity can

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optionally be substituted or coupled to a physiologically active acceptable moiety, and where  $X^-$  is an anion.

9. A composition according to claim 8 where A is a hydrocarbyl group  $(CH_2)_n$  where n is 1 to 24.
10. A composition according to claim 9 where n is 4 to 12.
11. A pharmaceutical composition of any of claims 8 to 10 for the treatment of, and for the alleviation of symptoms of CNS diseases associated with cholinergic disorders and for the alleviation of side-effects induced by antimuscarinic tricyclic antidepressants which comprises an effective quantity of a compound claimed in any of claims 1 to 6 or as defined in claim 8.
12. A composition according to claim 8, for the treatment of Alzheimer disease, tardive dyskinesia, effects of stroke, neuralgic pains and general analgesia.
13. A composition for the treatment of, and alleviation of symptoms of peripheral cholinergic disorders, glaucoma, myasthenia gravis, treatment of urine bladder dome (neurogenic urine bladder) and for the pretreatment of organophosphorus intoxication in combination with known antimuscarinic, antinicotinic drugs and antagonists of the excitatory amino acid receptors such as glutamate receptor, comprising an effective quantity of a compound claimed in any of claims 1 to 7 or as defined in claim 8.
14. A pharmaceutical composition according to claim 8, of prolonged action, for affections in the CNS and periphery, where the pyridinium moiety is coupled to an alkyl chain, a polysaccharide or an oligosaccharide residue.
15. A pharmaceutical composition according to claim 8 wherein the pyridinium moiety is coupled to a biodegradable polysaccharide for the slow release of the active component and for use in a biodegradable device for the sustained delivery of carbamates to the peripheral and central nervous system.

16. 3-Positioned substituted pyridinium compounds and compositions containing them, substantially as hereinbefore described and with reference to any of the Examples.
17. Pharmaceutical composition according to claim 8, together with nicotinic and/or muscarinic agonists which confer a higher efficacy than each of them separately, for treating cholinergic deficiency diseases.
18. Pharmaceutical compositions according to claim 8, together with nicotinic and/or muscarinic and/or glutamate antagonists that confer a higher efficacy than each of them separately, for the treatment of hypercholinergic impairments such as those caused by reversible and irreversible cholinesterase inhibitor intoxication.